**SUPPORTING INFORMATION**

![Zimm plots](image)

**Figure S1.** Zimm plots of a) amino-terminated hyperbranched poly(BAC2-AMPD1); b) hyperbranched poly(BAC2-AMPD1)-PEG in methanol.
Figure S2. Relationship between the average scattering intensity from DLS measurements and the concentration of hyperbranched poly(BAC2-AMPD1)-PEG (µg/mL) in deionized water, a) hyperbranched poly(BAC2-AMPD1)-PEG dissolved in deionized directly; b) micelles of hyperbranched poly(BAC2-AMPD1)-PEG; c) DOX loaded micelles of hyperbranched poly(BAC2-AMPD1)-PEG.

Figure S3. pH dependent a) hydrodynamic size; b) average scattering intensity from DLS measurement, of micelles of hyperbranched poly(BAC2-AMPD1)-PEG. All data represent mean ± SD (n = 3).
Figure S4. Hydrodynamic size distribution of 0.5 mg/mL of micelles of hyperbranched poly(BAC2-AMPD1)-PEG in the presence of 10 mM GSH, a) before incubation; b) 15 min post incubation at 37 °C. (Normalized intensity)

Figure S5. *in vitro* cytotoxicity of hyperbranched poly(BAC2-AMPD1)-PEG in HepG2 and MCF-7 without or with BSO treatment. All data represent mean ± SD. (n = 3).